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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/718,984	11/21/2003	Ivan Krivokapic	30287-112	2739

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PULSE-LINK, INC.
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CARLSBAD, CA 92008

EXAMINER

LU, JIA

ART UNIT	PAPER NUMBER
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2634

DATE MAILED: 03/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/718,984

Applicant(s) **OK**

KRIVOKAPIC, IVAN

Examiner

Jia W. Lu

Art Unit

2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-28 and 30-34 is/are rejected.
- 7) ☒ Claim(s) 29 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>11/21/03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1, 3, 4, 6-9, 19, 20 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over US patent 6,529,568 in view of US patent 5,854,593 and SU 1396103A.
 - a. Regarding claim 1, patent '568 discloses a receiver system for receiving an ultra-wideband signal (column 1, line16), comprising a template generator (figure 7, element 714) and a single correlator (figure 7, element 710). Patent '568 fails to disclose a signal amplifier and energy estimator in its receiver. The use of a pulse amplifier to ensure ample signal for processing is well known in the art (see US patent 5,854,593 figure 6A element 185). The use of an energy estimator for the use of acquiring power or energy information is also well known in the art. Patent SU 1396103A for example, uses energy estimation means for phase adjustments (see basic abstract). It would be obvious to one skilled in the art to incorporate these elements to into a receiver to amplify correlated

signal and to adjust phase shifting during transmission as a result of interferences.

- b. Regarding claims 19 and 20, patent '598 discloses a receiver including elements as described in 1 above, further comprising teachings for a quantizer made of sample-and-hold and analog-to-digital processing units (column 16, lines 3-6), output of which can be fed to a digital signal processor (column 16, lines 11-13).
- c. Regarding claim 3, patent '568 describes the use of a digital signal processor to generate signal for input to the template generator (column 16, lines 10-19).
- d. Regarding claim 4, patent '568 describes the generation of a local signal (figure 7, element 714), and the use of electromagnetic energy in a local signal is inherent. (see number 3 below).
- e. Regarding claim 6, the use of electromagnetic energy in incoming signals is inherent. Patent '568 mentions its use in column 7, lines 61.
- a. Regarding claim 7, patent '568 discloses a receiver for receiving ultra-wideband pulses comprising electromagnetic energy.
- f. Regarding claim 8, patent '568 discloses an incoming signal to be electromagnetic pulses with duration of 0.5 nanoseconds (column 9, line 12). It would be obvious to one skilled in the art to use a timing duration in this range for optimizations.

- g. Regarding claims 9 and 23, patent '568 discloses the use of pulse position modulation technique in its receiver (column 18, lines 30-31).
3. Claims 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over US patent 6,529,568 in view of US patent 5,854,593 and SU 1396103A as applied to claim 19 above, further in view of US patent 5,640,417. Patent '568 teaches the use of a digital signal processor. While it does not explicitly state its functions, the standard functions of a digital signal processor are well known in the art. Patent 5,640,417 describes one such function of signal decoding (column 8, lines 12-15).
4. Claims 2 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over US patent 6,529,568 in view of US patent 5,854,593 and SU 1396103A as applied to claims 1 and 19 above, further in view of US patent 3,906,453. Patent '568 discloses a template generator comprising a timing signal generator (figure 7, element 714), but it does not describe a gate and an amplifier in communication with the gate. However, patent '453 discloses a logic gate in communication with a timing signal generator (figure 4, elements 187 and 218), and an amplifier (figure 4, element 181) in communication with the gate. It would be obvious to one ordinarily skilled in the art to incorporate this template generator into an UWB receiver to generate a gated, controlled periodic signal that is amplified to ensure adequate signal strength for processing.
5. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over US patent 6,529,568 in view of US patent 5,854,593 and SU 1396103A as applied to claim

4 above, and further in view of US patent 6,378,080. Patent '080 shows the use of a local pulse with duration of 50 picoseconds (column 6, lines 31-32). It would be obvious to one skilled in the art to use a timing duration in this range for optimizations.

6. Claims 10, 11, 13, 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over US patent 6,529,568 in view of US patent 5,854,593 and SU 1396103A as applied to claims 1 and 19 above, and further in view of US patent 5,210,772.

a. Regarding claims 10 and 24, patent '568 describes a receiver containing a correlator; patent '772 discloses a correlator within a receiver comprising a mixer (figure 2, element 13) and a matched filter (figure 2, elements 16). It would be obvious to one ordinarily skilled in the art to use a matched filter in correlation in order to prove optimum power ratio output.

b. Regarding claims 11 and 25, patent '772 disclose a correlator which mixes local signal with incoming signal, and passes mixed signal through the matched filter (figure 2, elements 11-16).

c. Regarding claim 13, patent '772 uses a multiplier as a mixer (figure 2, element 13).

7. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over US patent 6,529,568 in view of US patent 5,854,593, SU 1396103A, and US patent 5,210,772 as applied to claim 10 above, further in view of US patent 5,212,827. It is well known in the art that an AGC can be used to change the gain of the

amplifier, as stated in US patent 5,212,827. It would be obvious to one ordinarily skilled in the art to use an AGC in order to change the degree of amplification of the signal.

7. Claims 15-17 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over US patent 6,529,568 in view of US patent 5,854,593 and SU 1396103A as applied to claims 1 and 19 above, and further in view of US patent 3,835,393.

a. Regarding claims 15, 16 and 27, patent '393 discloses a detector for the signal energy comprising an absolute value detector (a square law detector, column 4, lines 18-28) and an integrator.

b. Regarding claim 17, it is inherent that integration occurs over a predetermined time period.

8. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over US patent 6,529,568 in view of US patent 5,854,593, SU 1396103A and US patent 3,835,393 as applied to claim 17 above, further in view of US patent 4,846,920. Patent '920 describes means of obtaining signal energy value by integrating over the period of 1 microsecond. It would be obvious to one skilled in art to use this standard integration duration for a desirable speed in calculations.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 28, 31-34 are rejected under 35 U.S.C. 102(b) as being anticipated by Karl Masreliez in US patent 5,973,494. Patent '494 discloses a receiver comprising two receivers (figure 7, elements 178 and 179), a selector switch (figure 7, element 225), pulse level quantizer (figure 7, elements 217, 218, 224), and a digital signal processor (figure 7, element 226).

Allowable Subject Matter

10. Claim 29 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jia W. Lu whose telephone number is 571-272-6042.

The examiner can normally be reached on Mon- Fri, 9:30AM-5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on (571)272-3056. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jia Lu
Examiner



STEPHEN CHIN
SUPERVISORY PATENT EXAMINER
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